

Chapter 6 Appendix A: Hazard Mitigation Activity Profiles & Capability Assessment

Building Codes: County

Source: Building Code Survey, Coastal Hazard Mitigation Conference, 1996 **(updated 2007)**

	Hawai'i	Honolulu	Kaua'i	Maui
Department administering standard building codes	Building Division, DPW - 961-8321	Building Department -523-6308	Division of Building	DPW, Environmental Management, Division of Development Services Administration, 270-7236
Name of standard building code	UBC	IBC	UBC	UBC
Version of code	1991	2003	1997(with highway appendices)	1997 with amendments
Year codes adopted	1993	2007	1999	2000
Structural design provisions amended		No	No	No
Prescriptive provisions for dealing w/light wood frame and masonry construction in high wind areas	2425: not adopted 2518: adopted	Yes	Yes	Appendices adopted but provisions optional
Minimum wind speed in code	80 mph	105 mph	80 mph	80 mph
Compliance required for self-built structures	Yes	Yes	Yes	Yes
Required building plans for single & multi-family structures needing permits	Yes	Yes	Yes	Yes
Permitted structures requiring no plans	None	None	None	None
Required stamp by architect or engineer on plans	Yes	Yes	Yes	Yes
Exceptions to stamp requirement	R3< 1300 ; R3 & M1 < 1800; non-residential: 1 story < \$40 K; 2 story < \$35 K	1 story < \$40K; 2+ stories < \$35 K	1 story: \$40K; 2 stories: \$435 K	Per Hawaii Revised Statutes Section 464-13
Inspections performed by government employed building inspectors	No	Yes	Yes	Yes
Approved non-government building inspectors	Structural engineers; special requests & approval.	Special inspection for sheathed shear walls, diaphragms, uplift ties, etc., acc. to UBC Sec 306.	Special inspections in 1997 UBC, but not rigidly applied.	Yes, for Special inspections required by Section 1707
Building permit fees required	Yes	Yes	Yes	Yes

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Rate of permit fees	Scaled for residential from \$10 for < \$500 up to \$355 for first \$50 K, plus \$3 per \$1,000	Scaled for residential. Begins at \$8 for < \$500	Scaled for residential from \$10 for < \$500 up to \$516 for first \$100 K plus \$3 per \$1,000	Scaled for residential from \$15 for < \$500; \$639.50 for first \$100 K to \$500 K, plus \$3.50 per \$1,000
Number of structural inspections for single family dwellings	4	4	6	2
Points in construction process for various inspections	foundation framing walls\ties final	foundation framing fire rated walls final	foundation slab\flooring framing load path\up lift ties gypsum board\lath final	fire rated walls final framing foundation
Plans to adopt more recent versions of standard building codes	No	Yes	Yes	Yes
Version of codes to be adopted	2006 IBC	2003 IBC	2003 IBC	2000 IBC
Anticipated date for adoption of new codes	No set date	2007	No set date	No set date
Other changes planned for next three years	Yes	Yes	Yes	Yes
Types of changes to codes	Increase in seismic zone from 3 to 4.			
Length of time for government review and adoption of new standard building codes	6 months	18 months	18 months	18 months
NFIP minimum standards as part of permit system	Yes	Yes	Yes	Yes
Administration of NFIP minimum standards	Chief engineer approval; floodplain administrator - permit review, mapping, & gathering info	Permits; districting; penalties	Building permit; Certificate of Occupancy; permit reviews; flood certification; penalties for non-compliance	Department of Planning, Special Flood Hazard Area Development Permit, flood map revisions

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Mitigation Activities in each county

	Hawaii	Honolulu	Kauai	Maui
Planning Department	Chris Yuen (961-8288)	Department of Planning & Permitting 523-4432 Land Use, 523-4248	241-6677 Ian Costa, Planning Director	Clayton Yoshida (270-7735) Amending shoreline rules with Dr. Fletcher for most populated areas of island Participate in Project Impact Conference in 2000 in Wash, D.C. Working on photo of shoreline structures and determine conformity of irrigation lines and shoreline structures Modify shoreline area rules (Ch. 203, Maui Planning Commission). Stricter development standards within shoreline setback. <i>Beach Management Plan</i> received County Council endorsement. Updated Flood Hazard Ordinance to comply with FEMA after H. Iniki.
Civil Defense	Troy Kindred (935-0031) Education is #1 priority: Center for Study of Active volcanoes at UH- H; special lectures; tsunami museum; DOE curriculum – earthquake exercise, faculty training Earthquake Advisory Board: increase awareness on zoning requirements through brochures distributed with building permit.	537-5367 Department of Emergency Management – 2007 change	Mark Marshall, 241- 1800	Gen Iinuma (243-7285)

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	Hawaii	Honolulu	Kauai	Maui
Flood Coordinator	Hilo, 961-8327 Kona, 327-3530 ☒ 10 Design for channelization of Waieka Stream being planned	Mario Siu-Li 523-4247	241-6622 ☒ 10 NFIP standards (Ch. 27, HI City Code)	Francis Cerizo, 270-7771
Solid Waste/ Division	Director Department of Public Works 961-8083	Chief Refuse Division 692-5358 ☒ 10 Natural Disaster Debris Management Plan	Troy Tanigawa, 241-6880 ☒ 10 Disaster Degree Action Manual being compiled ☒ 10 Debris Management	John Harder, Chief Solid Waste Division 270-7881
Wastewater/ Division	961-8338 ☒ 10 Have developed emergency response plan		241-6610	270-7421 ☒ 10 Attending Conference for Emergency Preparedness next week ☒ 10 Have developed emergency response plan
Housing Department	961-9379 ☒ 10 Code compliance of building codes (esp. to Earthquake Zones)		241-6445	270-7805
Information Services/IT	Department of Data Systems, 961-8207	Department of Planning, GIS, Ken Schmidt 527-6012	Information Services, Department of Finance, 241-6523	Department of Management Information Services 270-7842

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US Army Corps of Engineers Paul Mizue: 438-8880 State-wide-Maintain Civil Defense response teams for Preliminary Damage Assessments, Emergency Power & Response as part of FEMA's Emergency Support Function 3 (Engineering & Public Works). State-wide conduct annual inspections for continuing eligibility of 34 existing flood control and shore protection projects with sponsors (counties)	<p>☒☑ Palai Stream flood control – feasibility underway. ☒☑ Keopu-Hienaloli Stream flood control- feasibility underway ☒☑ Repairs to Paauau Stream, Waiakea-Uka Stream, Wailoa Stream, Alenaio Stream - in construction ☒☑ Hurricane Evacuation Study for County of Hawaii- starting. ☒☑ Waiakea Stream Flood Control feasibility pending agreement with County. ☒☑ Holualoa Flood Hazard Special Study- underway Upper Alenaio Stream (FEMA Flood Insurance) ☒☑ Palai Stream flood control – completed reconnaissance, pending further review. ☒☑ Hilo Light Draft Harbor – starting reconnaissance ☒☑ Tie-down of propane tanks (MAP) ☒☑ Upgrade of Seismic Zone (MAP)</p>	<p>☒☑ Waolani Stream (FEMA Flood Insurance) ☒☑ Ala Wai Canal –joint flood control & ecosystem project in feasibility. ☒☑ Kahuku Area- joint flood control & ecosystem project - feasibility underway ☒☑ Wailele Stream flood control – feasibility underway ☒☑ Barbers Point harbor – feasibility investigations underway ☒☑ Wailupe Stream - design report pending agreement with City/State ☒☑ Kuliouou Stream Flood Control - pending feasibility start. ☒☑ Hauula/Punaluu/Kaaawa Shore Protection – completion of construction documents on hold pending real estate acquisition ☒☑ Waikiki Erosion Control - in initial reevaluation report stage. ☒☑ Waimanalo Stream & Reservoir Flood Hazard Study- starting ☒☑ Paukaulia Stream Special Study – flood plain study ☒☑ Waolani Stream (FEMA Flood Insurance)</p>	<p>☒☑ Kikiaola Harbor – completing construction documents ☒☑ Nawiliwili Harbor - feasibility start pending agreement with State ☒☑ Hurricane Evacuation Study – coastal inundation and vulnerability components (with FEMA) ☒☑ Hardening of the Kauai War memorial Convention Hall (emergency shelter) (MAP) ☒☑ Survey of buildings and hotels for emergency shelters (MAP) ☒☑ Project Hoomalu (HMGP) ☒☑ Hardening essential facilities (HMGP) ☒☑ Hardening Anahola Community Center (emergency shelter) (HMGP) ☒☑ Hardening Pepeekeo Radio Relay Facility (HMGP)</p>	<p>☒☑ Iao Stream Modification – continuing design report ☒☑ Hurricane Evacuation Study -starting ☒☑ Maalaea Harbor – completing environmental documentation ☒☑ Kaunapali Harbor (Lanai) – completing construction documents ☒☑ Launiupoko Shore Protection – under construction. ☒☑ Kahului Light Draft Harbor – completing construction documents ☒☑ Kahoolawe SBH- reconnaissance underway ☒☑ Kapaakea Stream - reconnaissance underway ☒☑ Kihei Area Erosion - reconnaissance underway ☒☑ Hurricane Evacuation Study – (with FEMA, pending 3/99 interagency decisions) ☒☑ Hanalei River, Maui Floodway (FEMA Flood Insurance) ☒☑ Wailuku River (FEMA Flood Insurance) ☒☑ Kuau Point (FEMA Flood Insurance) ☒☑ Iao Stream Modification – continuing</p>

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	<p>☒☑ Hardening Koloa Fire Station Doors (HMGP)</p> <p>☒☑ Hardening sewage treatment plants (HMGP) ☒☑ Pacific Tsunami Museum outreach/education (HMGP) ☒☑ Retrofit Hilo Central Fire Station (HMGP) ☒☑ Videotape on Volcanic and Seismic Hazards (HMGP) ☒☑ Breathing Protection for school</p> <p>Students, Teachers, and Staff (HMGP) ☒☑ UH-H Outreach Programs on 5 major hazards – including seminars for teachers, community groups, schools, and teacher training (HMGP)</p>	<p>☒☑ Ala Wai Canal – floodplain study</p> <p>(with state) ☒☑ Barbers Point harbor – feasibility investigations underway (with state) ☒☑ Makaha coast shore protection – reconnaissance stage ☒☑ Haleiwa/Waialua Flood control – completed reconnaissance, on hold pending funding ☒☑ Waialele Stream flood control – completed reconnaissance, on hold pending funding ☒☑ Honolulu Harbor – completing reconnaissance study</p> <p>☒☑ Keehi Lagoon – starting reconnaissance Hauula/Punaluu/Kaaawa Shore Protection – completion of construction documents on hold pending real estate acquisition and completion of environmental documentation ☒☑ Lualualei Flood Control – technical study underway for drainage/flood control recommendations (with NRCS) ☒☑ Building 525, Fort Shafter preparing design for relocation & expansion of the Pacific Ocean Division/Honolulu Engineer District Emergency Operations Center ☒☑ Flood proofing Sunset</p>		<p>feasibility investigations</p> <p>☒☑ Kahului Harbor – starting reconnaissance</p> <p>☒☑ Maalaea Harbor – completing environmental documentation ☒☑ Kaunapali Harbor (Lanai) – completing construction documents ☒☑ Launiupoko Shore Protection – completing construction documents ☒☑ Kahului Light Draft Harbor – completing construction documents ☒☑ Survey of buildings and hotels for emergency shelters (MAP)</p> <p>☒☑ Hardening Maui Memorial Medical Center (HMGP)</p>

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		Treatment Plant ☒ (HMGP)Hardening Honolulu Harbor Operations and Facilities		
Coastal Zone Management Program (STATE)	Hawaii Shoreline Erosion Management Study ☒ ☒ Aerial Photograph Analysis of Coastal Erosion...	HAZUS studies Oahu Shoreline Study	☒ ☒ Kauai Shoreline Erosion Management Study ☒ ☒ Aerial Photograph Analysis of Coastal Erosion...	Aerial Photograph Analysis of Coastal Erosion...
Electric Utility	HELCO	HECO (543-7070) Conducted joint exercise with state Civil Defense Completed <i>Emergency Response Plan</i> . Conducted "table top" exercise and a functional test with employees. Post-EQ (FEMA-1664-DR-HI) assessment & retrofits.	Kauai Island Electric Co.	MECO
Phone Companies	Nextel, 800-947-8500 Cingular, 639-5000 Verizon, 245-6654 Windward Wireless, 823-8801	GTE Hawaiian Tel AT and T Wireless 627-8500 Virtual wireless, 739-9677 Nextel, 262-8561 T-Mobile Sprint Hawaii/Sprint PCS, 800-4804727 Verizon Wireless, 627-0077	Verizon AT and T Wireless, 327-9300 Nextel, 331-1600 Hilo Kine Wireless, 96909649 Sperry Communications, 326-2224 T-MobileWireless Paradise, 935-6931 Aloha Wireless, 935-6931	AT and T Wireless, 871-2111 Nextel, 800-639-8359 Sprint, 566-9479 Verizon Wireless, 1-800-256-4646 T-Mobile 808-873-3260

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Department of Accounting and General Services

Public Works Division Ernest Lau (586-0526)

Once established, implement design criteria for shelter facilities. This includes hardening public schools.

Department of Education

Work with state Civil Defense to get matching federal funds in order to harden public school buildings

New school buildings built to current minimum building codes for earthquakes and wind.

State of Hawaii Department of Defense State Civil Defense

Kevin Richards (734-4300), Acting SHMO

Civil Defense Act of 1950, as amended, and HRS 128 (Civil Defense and Emergency Act)

Mitigation Assistance Program (Earthquake, Hurricane, & Hazard Mitigation): Hawaii State Earthquake Advisory Board, Hawaii State Mitigation Forum, Hurricane Advisory Board, *State Hazard Mitigation Plan*, *State of Hawaii Drought and Wildland Fire Mitigation Plan*, County Civil Defense Programs for Hazard Awareness, hurricane vulnerability studies

Hazard Mitigation Grant Program

Jeanne Johnston (733-4301 ext. 552)

Hawaii State Earthquake advisory Committee

Tsunami Technical Review Committee Lava Flow

Mitigation Technical Review Committee State

Civil Defense sponsored Technical Committee

University of Hawaii, SOEST, Center for Study of Active Volcanoes

Don Thomas (895-6547) Public outreach and education for all hazards.

Department of Transportation Harbors Division

Fred Nunez (587-1862) Plan related to Homeland Security with other agencies (sheriff, National Guard, Coast Guard, DLNR, PSA, etc)

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Highways Division (587-0248)

Retrofit bridge to withstand earthquakes- an ongoing and active program ☒ ¹⁰ Stabilize slopes with a high potential for rock fall-an ongoing and active program ☒ ¹⁰ Begin detailed SCOUR evaluation for bridges over water, to ensure can withstand 500-year storm- an ongoing and active program ☒ ¹⁰ Working to update emergency procedures- ongoing activity in coordination with DIR-CZ ☒ ¹⁰ Coordinate and implement Homeland Security measures

Department of Health Solid Waste Division (586-4240)

☒ ¹⁰ Model potential debris generation and suggest BMP ☒ ¹⁰
Create one statewide plan, and provide a shell for each county

Bioterrorism Preparedness and Response

Bart Arnoff (587-6597)

☒ ¹⁰ Developing capabilities at state lab to identify chemical agents and agents of bioterrorism

☒ ¹⁰ Developing public information and providing training in this area.

☒ Improving disease investigation activities.

Department of Business, Economic Development, and Tourism, Energy, Resources, and Technology Division (587-3805)

Developed Emergency Energy Plan ☒ ¹⁰ Energy Vulnerability Assessment

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- ☒ 10 Young Brothers, Inc. generator project ☒ 10 Phase I and II Energy Generator surveys completed
- ☒ 10 Updating NHA emergency preparedness plans ☒ 10 Generator survey will be compiled in database and put on GIS system for management purposes

Hawaii Coastal Zone Management Program

- ☒ 10 HRS 205A – promulgated in 1977 in response to the Federal Coastal Zone Management Act of 1972 – encompasses various program areas, including coastal hazards (“to reduce hazard to life and property from tsunamis, storm waves, stream flooding, erosion, subsidence, and pollution”). ☒ 10 Permit system to control development within a Special Management Area (SMA); Shoreline Setback area; Marine and Coastal Affairs; Federal Consistency Provision. ☒ 10 Erosion Management Program Recommendations for Hawaii, video *Planning for the Inevitable*

Department of Land and Natural Resources

- ☒ 10 HRS §26-15 established DLNR, HRS 171 details jurisdiction

Flood Control & Dam Safety Section, Lands Division

Carol Tyau, NFIP Coordinator

- ☒ 10 Developed and adopted Hawaii Flood Management Plan

Coastal Lands Program

DLNR Coastal Lands Division (tel:587-0377; fax: 587-0455; <http://www.hawaii.gov/dlnr/occl/index.php>)

- ☒ 10 Developed the CLP’s Coastal Erosion Management Plan and planning a demonstration beach nourishment project.
- ☒ 10 Waikiki Beach –storm wave prevention impact project ☒ 10 Kihei Beach, Maui, restoration project

☒ 10 Coastal Construction Guidebook (in partnership with CZM and UH Seagrant)

Mitigation Activities: Private Sector- Statewide

Western States Seismic Policy Council

<http://vishnu.glg.nau.edu/wsspc/tsunami/TsunamiHMC.html>

- ☒ 10 Education materials: “Tsunami: The Great Waves,” “Tsunami,” “Tsunami Warning System in the Pacific,” “Business Guide to Tsunami Planning”

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Structural Engineers Association of Hawaii

<http://www.seaoh.org/>

☒ ⑩ “Believes that quantitative criteria establishing a minimum level of structural capacity should be established in order to define structurally “unsafe” buildings.” ☒ ⑩ “Offers to provide technical assistance in the development of an abatement ordinance which balances hazard reduction and economic concerns.”

Hurricane Protection Systems, Inc.

Gerald Peters (306-4400)

☒ ⑩ Maui County FEMA Project Impact- retrofitted house in Kihei for hurricane and tropical storm protection. Discovery Channel airing twice.
☒ ⑩ Kahalui Elementary School protective screening- TV channel to do hurricane segment

Hawaii State Earthquake Advisory Committee

☒ ⑩ Building Codes- Honolulu 2003 1 BC Amendments for Wind Risk

Hawaii 1997 UBC Amendments for EQ, Risk





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Federal Emergency Management Agency







US Department of Commerce, NOAA Tsunami Hazard

Mitigation Program

  Hawaii steering group members: Jim Weyman (NOAA); Kevin Richards 733-4300; Jeanne Johnston 733-4300; PL 105-277 (10/21/98) - \$2.3 million for tsunami mitigation   State of Hawaii Input to FY98 \$50,000 tsunami mitigation funds: (1) raise public awareness of tsunami hazards and mitigation (public safety video & publications, support existing public outreach programs); (2) logistically support meetings and projects of a Hawaii Tsunami Group; (3) travel funds; (4) miscellaneous (supplement equipment cost to permit airing video broadcast from local Emergency Operations Center to local CATV, supplement cost of building revetment wall)

NOAA/NWS

Planning Coordination Meteorologist, Ray Tanabe; James Weyman, Meteorologist in Charge

  Public Outreach   Local Flood Warning Systems   Drought Plan